———. *The front ranges of Sierra Madre Oriental, from Ciudad Victoria to Tamazunchale.* Eclog. Geol. Helvetiae **33** (2): 313–363, 10 figs., 1 geol. map and sects. 1940.

Imlay, R. W. *Jurassic formations of Gulf Region.* Bull. Amer. Assoc. Petrol. Geol. **27** (11): 1407–1533, 14 figs. 1943.

———. *Correlation of the Jurassic formations of North America, exclusive of Canada.* Bull. Geol. Soc. Amer. **60** (9): 953–992. 1952.

Maldonado-Koerdell, M. *Contacto Jurásico-Cretácico entre las formaciones de Tamán y Tamazunchale, Estado de San Luis Potosí, en sus relaciones con la presencia de yacimientos petroleros.* Mem. Primera Conven. Interamericana Rec. Miner., Mexico, 1951; 234–239, 1 pl. 1952.

Muir, J. M. *Geology of the Tampico Region, Mexico:* 280 pp., 15 pls., 40 figs. Tulsa, Okla., 1936.

Rayner, D. H. *On* Leptolepis bronni *Agassiz.* Ann. Mag. Nat. Hist., ser. 10, **19**: 46–74, figs. 1–14, 1937.

Romer, A. S. *Vertebrate paleontology,* ed. 2: x + 687 pp., 377 figs. Chicago, 1945.

White, T. E. *A new leptolepid fish from the Jurassic of Cuba.* Proc. New England Zool. Club **21**: 97–100, pl. 1. 1942.

Woodward, A. S. *Catalogue of the fossil fishes in the British Museum (Natural History)* **3**: xlii + 544 pp., 18 pls., 54 figs. 1895.

ENTOMOLOGY.—*Notes, new synonymy, and new assignments in American Gelechiidae.* J. F. Gates Clarke, U. S. Bureau of Entomology and Plant Quarantine.

August Busck's excellent paper on the restriction of the genus *Gelechia*[1] is limited in scope to the treatment of North American species, although a few from Europe that concerned him are included. His studies were further limited by the unavailability of material, particularly specimens of species described by the late Edward Meyrick. Moreover, he made no attempt to include species from South America, which are an important part of the American fauna.

Since Busck's paper was written, the present writer has had the opportunity to examine the types of many of Meyrick's species and those of other authors. The study of these types has revealed previously unrecognized facts which are recorded in the following notes.

The new assignments and other changes indicated below are based on a study of the genitalia. Extensive revisionary studies in the family are necessary, but the present paper makes possible the proper assignment of the species treated.

The genus *Chionodes* Hübner has not previously been recorded from South America, although one species, *C. leucocephala* (Walsingham), is recorded from St. Croix, West Indies. The genus is holarctic in distribution and also occurs as far south as southern Chile.

Genus **Aroga** Busck

Aroga Busck Proc. U. S. Nat. Mus. **47**: 13. 1914.

[1] Proc. U. S. Nat. Mus. **86**: 563–593, pl. 58–71. 1939.

Aroga bispiculata (Meyrick), n. comb.

Gelechia bispiculata Meyrick, Exotic Microlepidoptera **3**: 23. 1923.

Type locality.—Congress, Ariz.

Remarks.—Meyrick compared this with *Lita variabilis* (Busck) to which it bears a slight resemblance but from which it is structurally distinct. The genitalia of *bispiculata* are characteristically those of an *Aroga* and leave no doubt as to its assignment here.

Aroga speculifera (Meyrick), n. comb.

Gelechia speculifera Meyrick, Exotic Microlepidoptera **4**: 59. 1931.

Type locality.—Hope, Ark.

Remarks.—Known only from the type.

Aroga trachycosma (Meyrick), n. comb.

Gelechia trachycosma Meyrick, Exotic Microlepidoptera **3**: 21. 1923.

Type locality.—Venice, Calif.

Remarks.—In this species the harpe is reduced to a mere nodule emitting a moderately strong seta. The aedeagus is unusually robust and the vesica armed with many strong, short cornuti.

Aroga xyloglypta (Meyrick), n. comb.

Gelechia xyloglypta Meyrick, Exotic Microlepidoptera **3**: 22. 1923.

Type locality.—Venice, Calif.

Remarks.—When he described this species Meyrick stated, "Probably allied to *trichostola.*" The latter, however, is referable to *Chionodes* as shown by Busck.

Genus **Chionodes** Hübner

Chionodes Hübner, Verzeichniss bekannter Schmetterlinge: 420. 1825.

Chionodes agriodes (Meyrick), n. comb.

Gelechia agriodes Meyrick, Exotic Microlepidoptera **3**: 350. 1927.

Type locality.—Dividend, Utah.

Remarks.—This species is very near *C. seculaella* (Clarke) but appears to be distinct.

Chionodes clistrodoma (Meyrick), n. comb.

Gelechia clistrodoma Meyrick, Exotic Microlepidoptera **3**: 21. 1923.

Type locality.—Nogales, Ariz.

Remarks.—The female genitalia of *clistrodoma* are somewhat atypical for the genus but certainly the species belongs here, rather than in *Gelechia*. The anterior margin of the ovipositor is clothed with dense, long hairlike setae and the posterior margin bears about 10 long, stout, hooked setae.

Chionodes consona (Meyrick), n. comb.

Gelechia consona Meyrick, Trans. Ent. Soc. London, 1917: 50.

Type locality.—Lima, Peru.

Remarks.—Meyrick believed this to be allied to the North American *unifasciella*, but the latter species is referable to *Aroga*.

Chionodes dryobathra (Meyrick), n. comb.

Gelechia dryobathra Meyrick, Trans. Ent. Soc. London, 1917: 49.

Type locality.—La Crumbre, Colombia, 6,600 feet.

Remarks.—A typical *Chionodes* except for a somewhat aberrant genital opening in the female which, I think, may be regarded only as of specific importance.

Chionodes eburata (Meyrick), n. comb.

Gelechia eburata Meyrick, Trans. Ent. Soc. London, 1917: 50.

Type locality.—La Crumbre, Colombia, 6,600 feet.

Remarks.—Examination of the male genitalia leaves no doubt as to the proper assignment of this species in *Chionodes*.

Chionodes halycopa (Meyrick), n. comb.

Gelechia halycopa Meyrick, Exotic Microlepidoptera **3**: 350. 1927.

Type locality.—Alpine, Brewster County, Tex.

Remarks.—Despite the rather abnormal palpi the female genitalia are typical of this genus and no doubt the species is referable here.

Chionodes icriodes (Meyrick), n. comb.

Gelechia icriodes Meyrick, Ann. Mus. Nac. Hist. Nat., Buenos Aires, **36**: 384. 1931.

Type locality.—Peulla, Llanquihue Province, Chile.

Remarks.—The occurrence of this species in southern Chile represents the southernmost point at which a *Chionodes* is known to exist.

Chionodes lacticoma (Meyrick), n. comb.

Gelechia lacticoma Meyrick, Trans. Ent. Soc. London, 1917: 48.

Type locality.—Chosica, Peru, 2,800 feet.

Remarks.—This small species is similar in aspect to the North American *C. xanthophilella* (Barnes and Busck).

Chionodes litigiosa (Meyrick), n. comb.

Gelechia litigiosa Meyrick, Trans. Ent. Soc. London, 1917: 49.

Type locality.—Huigra, Ecuador, 4,500 feet.

Remarks.—In size and general appearance *litigiosa* is similar to the California lupine-feeding *C. lophosella* (Busck) but may be distinguished from it at once by the absence of raised scales on the forewing.

Chionodes perissosema (Meyrick), n. comb.

Gelechia perissosema Meyrick, Exotic Microlepidoptera **4**: 351. 1932.

Type locality.—Alta Gracia, Argentina.

Remarks.—The genitalia of *perissosema* leave no doubt as to its assignment here.

Genus **Filatima** Busck

Filatima Busck, Proc. U. S. Nat. Mus. **86**: 575. 1939.

Filatima asbolodes (Meyrick), n. comb.

Gelechia asbolodes Meyrick, Exotic Microlepidoptera **3**: 349. 1927.

Type locality.—Alpine, Brewster County, Tex.

Remarks.—A distinct species belonging in the group without sex scaling on the underside of the hindwing of the male.

Filatima collinearis (Meyrick), n. comb.

Gelechia collinearis Meyrick, Exotic Microlepidotpera **3**: 349. 1927.

Type locality.—Alpine, Brewster County, Tex.

Remarks.—There are no described North American species which appear to be closely related to *collinearis*.

Filatima isocrossa (Meyrick), n. comb.

Gelechia isocrossa Meyrick, Exotic Microlepidoptera **3**: 346. 1927.

Filatima virgea Clarke, Journ. Washington Acad. Sci. **37**: 272, figs. 10–10b, 13. 1947. (New synonymy.)

Type localities.—Alpine, Brewster County, Tex. (*isocrossa*); Presidio, Tex. (*virgea*).

Remarks.—The genitalia of this species are distinct, and there can be no doubt *virgea* is a synonym.

Filatima monopa (Meyrick)

Gelechia monopa Meyrick, Exotic Microlepidoptera **3**: 350. 1927.

Filatima monopa (Meyrick), Busck, Proc. U. S. Nat. Mus. **86**: 576. 1939.

Gelechia epigypsa Meyrick, Exotic Microlepidoptera **3**: 351. 1927. (New synonymy.)

Type localities.—Alpine, Brewster County, Tex. (*monopa*, *epigypsa*).

Remarks.—I have examined the types of both species and the genitalia are identical. Meyrick's *epigypsa* is only a strongly marked specimen.

Filatima nucifer (Walsingham), n. comb.

Gelechia nuzifer Walsingham, Biologia Centrali-Americana **4**: 69. 1911.

Type locality.—Sonora, Mexico.

Food plant.—Mesquite (leaves).

Remarks.—I have compared a series of 12 specimens, from South Airport Road, El Paso, Tex., with paratypes of Walsingham's species in the U. S. National Museum collection and they are identical. This is the first record of the occurrence of *nucifer* in the United States but it will undoubtedly be found throughout the southwest wherever its food plant occurs. In addition to the above there are five specimens from San Benito, Tex. (April 1952; P. A. Glick).

The El Paso specimens were reared by J. A. Baker and show the emergence date of August 16, 1951.

Filatima sperryi Clarke

Filatima sperryi Clarke, Journ. Washington Acad. Sci. **37**: 270. 1947.

Type locality.—Barton Flats, Calif.

Remarks.—Since describing this species I have been able to examine six specimens from Mojave County, Ariz. Only one of these, a female, shows the contrasting brown costal area of the forewing and this not so conspicuously as in the type specimens. In one male the brown is slightly indicated but in the others there are only occasional scattered scales or none at all.

Filatima tephrinopa (Meyrick), n. comb.

Nothris tephrinopa Meyrick, Exotic Microlepidoptera **3**: 496. 1929.

Type locality.—Fort Davis, Tex., 5,000 feet.

Remarks.—The brush of second segment of palpus is expanded more than usual for this genus but the male genitalia of *tephrinopa* leave no doubt as to its proper placement.

Filatima ornatifimbriella (Clemens)

Gelechia ornatifimbriella Clemens, Proc. Ent . Soc. Philadelphia **2**: 420. 1864.

Filatima ornatifimbriella (Clemens), Busck, Proc. U. S. Nat. Mus. **86**: 575. 1939.

Gelechia xanthuris Meyrick, Exotic Microlepidoptera **3**: 346. 1927.

Type localities.—"Illinois" (*ornatifimbriella*); Dividend, Utah (*xanthuris*).

Remarks.—This common, variable, lupine-feeding species is found throughout western United States and Canada. The only other described species with similar genitalia is *lepidotae* Clarke, but there are abundant specific differences.

Genus **Gelechia** Hübner

Gelechia Hübner, Verzeichniss bekannter Schmetterlinge: 415. 1825.

Gelechia gracula (Meyrick), n. comb.

Nothris gracula Meyrick, Exotic Microlepidoptera **3**: 495. 1929.

Nothris diaconalis Meyrick, Exotic Microlepidoptera **3**: 495. 1929. (New synonymy.)

Type localities.—Alpine, Brewster County, Tex., 7,000 feet (*gracula*); Fort Davis, Tex., 5,000 feet (*diaconalis*).

Remarks.—Aside from size I can see nothing substantial on which to base specific separation. The genitalia match perfectly.

Gelechia bianulella (Chambers)

Oeseis bianulella Chambers, Cincinnati Quart. Journ. Sci. **2**: 255. 1874.

Nothris melanchlora Meyrick, Exotic Microlepidoptera **3**: 496. 1929. (New synonymy.)

Type localities.—"Texas" (?) (*bianulella*); Fort Davis, Tex., 5,000 feet (*melanchlora*).

Remarks.—The two agree in every respect, including genitalia, and must be considered synonymous. The shape of the tuft of second segment of palpus, on which Chambers based his genus *Oesis*, led Meyrick to describe this and other species of *Gelechia* in *Nothris*. As pointed out by Busck, the genitalia of the latter genus are of an entirely different type.

Gelechia mundata (Meyrick), n. comb.

Nothris mundata Meyrick, Exotic Microlepidoptera **3**: 495. 1929.

Type locality.—Mescalero, N. Mex., 7,000 feet.

Remarks.—This species is very close to *gracula* and may even be a form of it, but more material from the type locality will be necessary to determine that point.

Gelechia thymiata (Meyrick), n. comb.

Nothris thymiata Meyrick, Exotic Microlepidoptera **3**: 497. 1929.

Type locality.—Nogales, Ariz.

Remarks.—This, like the three foregoing species, clearly belongs in *Gelechia* and, on the structure of palpus, is allied to the *bianulella-monella* group of the genus.

ENTOMOLOGY.—*Two new species of mosquitoes from the Yemen (Diptera: Culicidae).*[1] KENNETH L. KNIGHT, U. S. Naval Medical Research Unit No. 3, Cairo, Egypt.[2]

This paper describes the new species occurring in a collection of mosquitoes made by the author while a member of a medical survey team to the Yemen from U. S. Naval Medical Research Unit No. 3. A complete account of this collection is being prepared for a subsequent paper. The larval chaetotaxal nomenclature used in this paper is that of Belkin (1950).

Culex (Culex) mattinglyi, n. sp.

1941. *Culex (Culex) laticinctus* Edwards. Edwards, Mosq. Ethiopian Region **3**: 313. The record from San'a, Yemen (Scott and Britton).

Adult.—A brown species of medium size with sparsely haired male palpi and broad straight pale basal bands on the tergites.

MALE: Wing length approximately 4.5–5.0 mm. *Head:* Proboscis dark. Palpus approximately equal to proboscis in length; dark, a variable amount of pale scaling laterally along apical portion of III and baso-ventrally on IV and V; very sparsely-haired, most of those present being confined to IV; IV and V not markedly uptilted. Vertex with narrow white scales dorsally and broad white scales laterally, upright-forked scales pale brownish. *Thorax:* Scutum with brownish-golden narrow scales, the scales paler in color along the scutal margins and on the prescutellar space. Scutellar scales narrow, pale. *Apn* and *ppn* with some white scales present, usually both broad and narrow. Each of the following pleural areas with a patch of broadened whitish scales: propleural, dorsal sternopleural, medio-posterior sternopleural, dorsal mesepimeral (confluent with hair tuft), and medial mesepimeral. A single lower mesepimeral bristle present (two on one side of each of two specimens). *Legs*: Coxae each with an anterior patch of white scales. Fore and mid femora anteriorly dark except for an apical line of yellowish scales; hind femur with basal half pale except for the dorsal margin and apically, apex with a line of pale scales. Tibiae anteriorly dark except for apical pale patches. Tarsi dark. Fore and mid tarsal claws unequal, each unidentate; hind equal, simple (from slide mount). *Wings:* Dark-scaled. Halter knobs at least partially pale. *Abdomen:* Tergites III-VII with broad straight basal whitish bands. Sternites pale-scaled, scattered dark scaling may be present. *Genitalia* (Fig. 1a, b): Basistyle distinctly swollen; tergal surface bearing a dense covering of short and long setae, outer and sternal surface bearing the usual elongate setae; appendage *a* (terminology of Edwards, 1941: 280 and fig. 103a) markedly proximal to appendages

[1] The opinions or conclusions contained herein are those of the author and are not to be construed as official or reflecting the views of the Navy Department or of the Naval Service at large.

[2] Now officer-in-charge, U. S. Navy Preventive Medicine Unit No. 1, Naval Air Station, Jacksonville, Fla.